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10/681,857	10/07/2003	Hideaki Yamagata	RCOH-1066	7146

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KNOBLE & YOSHIDA, LLC
Eight Penn Center
Suite 1350
1628 John F. Kennedy Blvd.
Philadelphia, PA 19103

EXAMINER	
PATEL, JAYESH A	
ART UNIT	**PAPER NUMBER**
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	**Application No.** 10/681,857	**Applicant(s)** YAMAGATA, HIDEAKI
	Examiner Jayesh A. Patel	**Art Unit** 2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) *9,13-20,25 and 37* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-12,21-24,26-36 and 38-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

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Response to Arguments

1. Applicant's amendment filed on 03/08/07 has been entered and made of record.

2. Applicant's argument's regarding Claims 1-10 for 35 U.S.C 101 rejections are not persuasive in view of the amendments.

3. Claims 9,13-20,25 and 37 have been cancelled by the applicant and will not be considered for further prosecution.

4. The examiner disagrees regarding applicant's arguments about Claims 21-28. The examiner still maintains a 101 rejection for the reasons explained below.

5. The 35 U.S.C 101 rejections pertaining to Claims 1-8,10-12, 29-36 and 38-40 have been withdrawn due to the claim amendments by the applicant. The Claims as amended now achieve tangible and concrete results. The applicant is arguing that Yotsui reference does not disclose a "reconstruction", the examiner disagrees. On **(page 7 Lines 19-25)** Yotsui recites that "the image data transformed to polar coordinates **(rotated)** is applied to the gray-level creating circuit 7which subjects the input image data to a second block conversion **(reconstructed)**".

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.
>
> ... a signal does not fall within one of the four statutory classes of Sec. 101.
>
> ... Signal claims are ineligible for patent protection because they do not fall within any of the four Statutory classes of Sec. 101.

Claim(s) **[21-24 and 26-28]** is/are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

Claim(s) **[21-24 and 26-28]** define a **[e.g. a signal, carrier wave,]** with descriptive material **[A storage medium with].** While "functional descriptive material" may be claimed as a statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, a **[signal, carrier wave, etc.]** embodying that same functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

Regarding Claims 21-24 and 26-28, the claims are recited, as storage medium and the specifications disclose the medium as being network and it is considered as a **"signal or a carrier wave"**. Thus are not statutory. At **page 32 (Sixth embodiment)**, It clearly states that a software program implements the functions of the above described preferred embodiments of the specified mark recognition device. Alternatively, the functions of the specified mark detection dictionary generating device or the specified mark detection device are both implemented software programs and are stored in a recording medium... and **the program is distributed by downloading among the users who are connected via a network such as internet**. Therefore as defined in the specification and given the broadest interpretation the claimed storage medium intend to cover **"Signal"**. Thus it is non-statutory for this reason.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8,10-12,21-24,26-36 and 38-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Yotsui et al. (EP 651337 A1) hereafter Yotsui.

6. Regarding Claim 1, Yotsui discloses a method of generating a dictionary for detecting a specified mark, comprising the steps of:
inputting a dictionary image at **(Page 3 Lines 41-42)**; generating a coordinate conversion table containing a list of corresponding coordinates between a predetermined XY coordinate and a predetermined polar coordinate for converting the inputted dictionary image into polar coordinates at **(Page 4 Lines 44-45 and Page 3 Lines 42-43)**, the polar coordinates being expressed by a central distance to a predetermined center and a central angle at **(Page 7 Lines 11-18)**; and generating a polar coordinate image for the dictionary from the dictionary image based upon the coordinate conversion table at **(Page 7 Lines 13-18)** and ; storing the coordinate conversion table and the polar coordinate image in the dictionary at **(Page 7 Lines 13-18)**; rotating to reconstruct an image based upon the coordinate conversion table at **(Page 3 Lines 42-43 and Page 4 Lines 20-21)**: and comparing the reconstructed image and specified mark candidates to determine the specified mark to identify a match at **(Page 3 Lines 44-50)**.

7. Regarding Claim 2, Yotsui discloses the method of generating a dictionary according to claim 1 wherein the dictionary image contains pixels at **(Page 6 Lines 30 –33)**, the central distance being in a central direction scale indicative of a distance between a center of each of the pixels and a center of the dictionary image in the predetermined XY coordinate, and the central angle being in a central rotation direction scale indicative of a degree of rotation of the dictionary image at **(Page 6 Lines 6-15)**.

8. Regarding Claim 3, Yotsui discloses the method of generating a dictionary according to claim 2 wherein the central distance being clustered into clusters **(Blocks)**, each of the clusters in the central direction being expressed by the polar coordinate at **(Page 7 Lines 26-36)**.

9. Regarding Claim 4,Yotsui discloses the method of generating a dictionary according to claim 3 wherein the clustering is performed based upon the central direction scale so that correspondence is one-to-one between the pixels between the dictionary image and the polar coordinate image as expressed in the polar coordinate at **(Page 7 Lines 26-36)**.

10. Regarding Claim 5,Yotsui discloses the method of generating a dictionary according to claim 3 wherein the clustering is performed based upon the central direction scale so that a substantial difference is prevented in characteristics value between the central direction scale and the central rotation direction scale at **(Page 7 Lines 26-36)**.

11. Regarding Claim 6, Yotsui discloses the method of generating a dictionary according to claim 2 wherein a rotated image is being rotated based upon the central angle, pixels having the same central direction scale being extracted from the rotated image, pixel values in the polar coordinate being determined based upon the extracted pixels at **(Page 7 Lines 19-21)**.

12. Regarding Claim 7, Yotsui discloses the method of generating a dictionary according to claim 2 wherein one of the pixels having the same distance in the central direction is selected, the central angle of the selected pixel being used as a standard, the central rotation direction scale of other pixels having the same distance in the central direction being set to the central rotation direction scale of the standard at **(Page 6 Lines 13-23)**.

13. Regarding Claim 8, Yotsui discloses the method of generating a dictionary according to claim 7 wherein a rotated image is being rotated based upon the central angle of the standard, pixels having the same central direction scale being extracted from the rotated image, in determining pixel values in the polar coordinate based upon the extracted pixels, a weight value being made large for a pixel value of the standard at **(Page 6 Lines 4-23)**.

14. Regarding Claim 10, Yotsui discloses the method of generating a dictionary according to claim 8 further comprising the additional steps of: comparing pixels between the reconstructed image and specified mark candidates to determine the specified mark at **(Page 3 Lines 41-54).**

15. Regarding Claim 11, Yotsui discloses a method of generating a dictionary for detecting a specified mark, comprising the steps of: inputting a specified mark image **(Page 3 Lines 41-42)**; converting the specified mark in a polar coordinate image expressed by a central distance to a predetermined center and a central angle **(Page 3 Lines 42-43)**; storing the polar coordinate image in a dictionary at **(Page 7 Lines 13-14)**; rotating the polar coordinate image; and comparing the rotated polar coordinate image and specified mark candidates to determine the specified mark to identify a match at **(Page 6 Lines 4-23)**.

16. Regarding Claim 12, Yotsui discloses a method of generating a dictionary for detecting a specified mark, comprising the steps of: inputting a specified mark image **(Page 3 Lines 41-42)**; converting the specified mark in a polar coordinate image expressed by a central distance to a predetermined center and a central angle **(Page 3 Lines 42-43)**; storing the polar coordinate image in a dictionary **(Page 7 Lines 13-14)**; rotating the polar coordinate image; and comparing pixels in the rotated polar coordinate image and corresponding pixels in specified mark candidates to determine the specified mark to identify a match at **(Page 6 Lines 4-23)**.

17. Claims 21-24 and 26-28are storage medium claims of the methods performed by the Claim 1-8 and 10-11. See above explanation of the corresponding Claims.

Also Regarding Claims 21-24 and 26-28 Yotsui discloses a storage medium for storing a computer program containing the instructions for generating a dictionary and for detecting a specified mark on **(Page 5 Lines 48-58)**.

18. Regarding Claim 29, Yotsui discloses an apparatus in **(Fig 1)** for generating a dictionary for detecting a specified mark, comprising:
a dictionary generation image input unit for inputting a dictionary image at **(Elements 1,6,8, Page 7 Lines 13-18 and Page 6 Lines 1-3)**; a coordinate conversion table generation unit for generating a coordinate conversion table containing a list of corresponding coordinates between a predetermined XY coordinate and a predetermined polar coordinate for converting the inputted dictionary image into polar coordinates, the polar coordinates being expressed by a central distance to a predetermined center and a central angle **(Element 6)**; a polar coordinate generation unit **(Element 6)** connected to said dictionary generation image input unit and said coordinate conversion table generation unit **(Element 6,8 and Page 6 Lines 1-3)** for generating a polar coordinate image for the dictionary from the dictionary image based upon the coordinate conversion table **(Element 6)** as shown in **Fig 1**; a dictionary **(Element 8)** connected to said polar coordinate generation unit for storing the coordinate conversion table and

the polar coordinate image at **(Elements 6 and 8 and Page 7 Lines 13-20)**;an image input unit for inputting an image at **(Element 1)**, a mark candidate extraction unit connected to said image input unit for extracting specified mark candidates from the inputted images **(Element 4)**; and a matching unit connected to said dictionary and said mark candidate extraction unit for rotating to reconstruct an image based upon the coordinate conversion table said, matching unit comparing the reconstructed image and the specified mark candidates to determine a specified mark to identify a match **(Elements 4,6,7,8,9,10 and Page 5 Lines 55-58)**.

19. Claim 30 is a corresponding apparatus Claim for the method of Claim 2; therefore see the explanation of Claim 2. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

20. Claim 31 is a corresponding apparatus Claim for the method of Claim 3; therefore see the explanation of Claim 3. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

21. Claim 32 is a corresponding apparatus Claim for the method of Claim 4;therefore see the explanation of Claim 4. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

22. Claim 33 is a corresponding apparatus Claim for the method of Claim 5; therefore see the explanation of Claim 5. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

23. Claim 34 is a corresponding apparatus Claim for the method of Claim 6;therefore see the explanation of Claim 6. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

24. Claim 35 is a corresponding apparatus Claim for the method of Claim 7;therefore see the explanation of Claim 7. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

25. Claim 36 is a corresponding apparatus Claim for the method of Claim 8;therefore see the explanation of Claim 8. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

26. Claim 38 is a corresponding apparatus Claim for the method of Claim 10;therefore see the explanation of Claim 10. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

27. Claim 39 is a corresponding apparatus Claim for the method of Claim 1;

therefore see the explanation of Claim1. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

28. Claim 40 is a corresponding apparatus Claim for the method of Claim 1; therefore see the explanation of Claim1. Yotsui further disclose an apparatus as claimed in Claim 29 in Fig 1.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jayesh A. Patel whose telephone number is

571-270-1227. The examiner can normally be reached on M-F 7.00am to 4.30 pm (5-4-9). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jayesh Patel
04/14/07
JP

JINGGE WU
SUPERVISORY PATENT EXAMINER